

**METHOD DEVELOPMENT OF SINGLE DROP
MICROEXTRACTION FOR PESTICIDES ANALYSIS USING HIGH
PERFORMANCE LIQUID CHROMATOGRAPHY**

SYAZA FAKHRIAH HAIRUL ANUAR

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Hasratul Nadiah Mohd Rashid
Supervisor
School of Chemistry and Environment
Faculty of Applied Science
Universiti Teknologi MARA
72000 Kuala Pilah, Negeri Sembilan

Tn. Sheikh Ahmad Izaddin
Sheikh Mohd Ghazali
Project Coordinator
B.Sc.(Hons.) Chemistry
Faculty of Applied Science
Universiti Teknologi MARA
72000 Kuala Pilah, Negeri Sembilan

Mazni Musa
Head of Programme
School of Chemistry and Environment
Faculty of Applied Science
Universiti Teknologi MARA
72000 Kuala Pilah, Negeri Sembilan

Date:_____

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	iv
TABLE OF CONTENTS	v
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF ABBREVIATIONS	x
ABSTRACT	xi
ABSTRAK	xii
CHAPTER 1 INTRODUCTION	
1.1 Research Background	1
1.2 Problem Statement	3
1.3 Significance of Study	3
1.4 Objectives	4
CHAPTER 2 LITERATURE REVIEW	
2.1 Pesticides	5
2.1.1 Methidathion	7
2.1.2 Vinclozolin (Internal Standard)	8
2.2 Liquid Phase Microextraction (LPME)	9
2.3 Single Drop Microextraction (SDME)	10
2.4 Application of SDME for Pesticide Analysis	13
2.5 High Performance Liquid Chromatography (HPLC)	14
CHAPTER 3 METHODOLOGY	
3.1 Materials and Chemicals	17
3.2 Instrumentation	17
3.3 Preparation of Standard Solutions	19
3.4 Optimization of HPLC Parameters	19
3.5 Single Drop Micro Extraction (SDME) Procedure	19
3.5.1 Optimization of Extraction Time	21
CHAPTER 4 RESULTS AND DISCUSSION	
4.1 Peaks Identification of Standard Pesticides	23
4.2 Optimization of HPLC Conditions	25
4.2.1 Effect of Mobile Phase Composition on the Analyte Separation	25
4.2.2 Effect of Flow Rate on the Analyte Separation	27
4.3 Optimization of Single Drop Microextraction	29

CHAPTER 5 CONCLUSION AND RECOMMENDATIONS	
5.1 Conclusion	31
5.2 Recommendations	33
 CITED REFERENCES	33
APPENDICES	39
<i>CURRICULUM VITAE</i>	45

ABSTRACT

METHOD DEVELOPMENT OF SINGLE DROP MICROEXTRACTION (SDME) FOR PESTICIDES ANALYSIS USING HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

The simple method Single Drop Microextraction and High Performance Liquid Chromatography has been developed for analysis of two different pesticides; methidathion and vinclozolin. The effect of mobile phase composition and flow rate of pump has been studied to determine the separation efficiency of analytes. Two different mobile phase composition of acetonitrile-water of 55:45 and 70:30 (v/v) ratios with flow rate of 0.8 mL/min and 1.0 mL/min respectively were studied in order to determine the best parameter for the developed method. The best experimental conditions of the proposed HPLC method were 10 μ L injection volumes, mobile phase acetonitrile-water with composition 55:45 (v/v) as eluent at flow rate of 0.8 mL/min. The extraction time of SDME technique was studied and optimized while the other parameters such as organic solvent, stirring rate, droplet volume and volume of aqueous sample were constant during the study. The extraction time was varied in the range of 10 to 30 minutes with 5 minutes interval. The separation of extracted samples was achieved by injected 1 μ L of sample in HPLC in order to reduce peak broadening. The optimized parameter of SDME technique in this study were 25 minutes of extraction time, toluene as organic solvent, 200 rpm stirring rate, 3 μ L microdrop volume and 4 mL aqueous samples. The SDME technique with HPLC-UV analysis has provided a simple, reliable, reproducible and low in cost for analysis of pesticides.